

applied, patient stated that the itching was very much relieved. Next day she reported considerable improvement in local conditions, and no further spreading. A second cc. of poison oak extract was given intramuscularly, and the lotion continued. The following day the patient stated that she was entirely free from all discomfort, the lesions had subsided, and there was no further spreading.

Case XXXIV. No. 5606 (private). A girl, fourteen years of age, had acute dermatitis from poison oak involving the entire face, forearms and legs. She had been exposed three days previously. One cc. of the toxine was injected, and the next morning the inflammation subsided a little. Two days later she telephoned that her condition was much improved. We did not see her again, but her physician subsequently advised us that apparently the injection was not effective. The patient recovered within two weeks.

The poison oak toxine was prepared by George Broemmell, B. S., Ph. G., Ph. C., as follows: "A given weight of fresh crushed leaves of *Rhus diversiloba* was covered with absolute alcohol, extracted filtered, and precipitated, and the precipitate dried at low temperature. Given weight of the toxine was dissolved in absolute alcohol and sterile water added. An arbitrary standard was set for the weight of the toxine, volume of absolute alcohol, and the volume of sterile water, but it is hoped to standardize the preparation soon."

To test the toxicity of this poison oak extract experimentally, Wm. W. Crane, a Stanford University senior medical student, recently utilized guinea pigs, rabbits and cats, and found that comparatively large doses were tolerated intramuscularly, intraperitoneally, and intravenously. As much as 3 cc. of this toxine was thus given, so it is evident that for human beings, much more than the 1 cc. of this preparation so far given would be tolerated.

Efforts were also made by Crane to produce poison oak dermatitis experimentally in young rabbits and guinea pigs with tender skin. The abdomens were shaved, and fresh leaves of the *Rhus diversiloba* were crushed and rubbed in. No dermatitis resulted in any of the animals, and it was concluded that common laboratory animals probably have a natural or species immunity to this form of poisoning. When Crane's work is finished, it will be made the subject of his medical thesis, which will be published.

The results here observed seem to prove that the injection of this poison oak toxine is attended with no danger to the patient, and that it has a specific therapeutic effect in causing prompt amelioration of the symptoms. As for the question of immunity, this has been observed to follow the injections in some cases; but whether or not this immunity would have developed anyway cannot be decided at this time. It is believed by Strickler that this is a temporary tissue immunity.

Due consideration has been given the fact that any new treatment of any condition may be followed by apparent improvement of the subjective symptoms; but in these cases the patients not only felt better, but their lesions certainly im-

proved in appearance in a very short time. Those cases in which no local treatment was applied also showed prompt rapid improvement. The occurrence of fresh lesions in remote parts of the body after injections of the extract, as observed in some of these cases, seems to indicate that the preparation has "a specific effect" on the patient. This impression is strengthened by the fact that in these cases there was no possibility that recent contamination could have been the cause. As for the behavior of the lesions after the injections, the amelioration of the subjective and objective symptoms was usually very prompt. The exfoliation and keratoplastic processes in the course of repair of the damaged skin should not be counted as part of the disease itself. Our experience has encouraged us to try this toxine out on a larger series of patients without giving any local treatment.

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RESULTS OF THE WASSERMANN TEST ON 1518 MEN AT SAN QUENTIN PRISON.

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The blood Wassermann test is a part of the routine examination of every man entering San Quentin Prison. Considerable data are thus available from which the following statistical study is made.

The present series is a review of the Wassermann tests performed on 1518 men entering the prison between April, 1918, and June, 1920. The total number showing some luetic involvement as determined by this test, performed at a reliable San Francisco laboratory, was 166 or 10.93 per cent. The details of the cases are as follows:

	Percentage of Total Cases		Percentage of Positive Cases	
Total number of positive cases	166	10.93		
Total number cases showing an initial triple plus reaction..	128	8.43	77.10	
Number of cases which became triple plus after one or two injections of Arsphenamine	12	.79	7.22	
Total triple plus cases.	140	9.22	84.33	
Number of cases which at no time showed more than two plus..	26	1.71	15.66	

In the great majority of cases, no physical signs of syphilis were present. One man, however, had many syphilo-dermata, while in another case the development of a characteristic copper-colored eruption was the means of discovering a syphilitic re-

Note ← - Questionable negative reaction	Number of cases treated	Showed improvement in Wassermann reaction	Percentage showing improvement	Showed no improvement to date	Percentage showing no improvement	Number of injections of Arseno- benzol. The figures in the squares represent the number men receiving the injections.													Totals	Average number in- jections received	
						Number of injections															
						1	2	3	4	5	6	7	8	9	10	11	12	13			
Number of cases treated	139																				
Wassermann reduced from XXX to - at last report		51	36.69					4	4	9	10	11	3	4	2	3		1		285	5.58
Wassermann reduced from XX or X to - at last report		4	2.87			1			1	1	1									13	3.25
Wassermann reduced from XXX or XX to ← at last report		11	7.91						2	2	1	1	2	2		1				65	5.90
Cases which showed improve- ment but not yet negative		41	29.49			1	9	5	3	5	4	1	2	2	3	2	3	1	237	5.29	
Cases which improved but later became XXX again				5	3.59					1	1		1			2				36	6.80
Cases which remained XXX thruout				27	19.42	3	5	5			2	2	4	4		1		1		132	4.88
Totals	139	107	77.53	32	23.02	5	18	17	16	20	18	11	12	4	10	2	5	1	768	5.33	

action by a second test, the Wassermann test on entrance having been negative.

Of the 166 definite cases of lues, 18 or 10.84 per cent. had committed some sexual crime, while the remainder, or 89.16 per cent., were confined for variable non-sexual offenses; 67 (39.75 per cent.) were married, 99 (60.25 per cent.) single. The youngest man was 18, and the oldest 56 years, the average age being 32.24 years. One hundred and eleven (66.27 per cent.) admitted having had some form of venereal disease, 33.73 per cent. denied having ever suffered from such ailments. Closer study reveals that 54 (32.53 per cent.) had had gonorrhœa only, nine (5.42 per cent.) syphilis alone, while 46 (27.71 per cent.) admitted having had gonorrhœa and syphilis. The total who admitted having had a "chancre" or syphilis was 55, or 33.73 per cent. One hundred and sixty-one (96.99 per cent.) had never received anti-syphilitic treatment previously, while five had had treatments. One had taken mercury rubs, one mercuric injections, while three had received "606" intravenously.

Anti-syphilitic measures are compulsory here, the treatment being as follows: Twenty injections of arsenobenzol (Dermatological Research Laboratories, Philadelphia, Pa.) are given to as many men every Saturday. Owing to the large number of luetics in prison at a given time, each man receives an injection about every four to eight weeks. The interval is somewhat long, but time is not a great factor here as far as the men are concerned, and the ultimate results are in the main satisfactory. In the interim each man receives mercury rubs nightly for six days, followed by a week of rest. This procedure being continued as long as signs of lues are present or until symptoms of mercurialism appear. In giving the injections, two solutions are prepared, each containing 6 grams of arsenobenzol in 600 c.c. of sterile water. After neutralization with 15 per cent. sodium hydroxide 60 c.c. (containing 6 decigrams of the drug) are administered to each man by means of a blood transfusion apparatus

devised by Dr. L. L. Stanley, resident physician, at this prison. This instrument consists simply of a small T-shaped metal tube, which can be attached to a Luer syringe and which contains ball valves so arranged that the fluid can be drawn in one arm of the T and discharged through the other. With this instrument a large series can be given in rapid succession. Before each injection sufficient blood is withdrawn for a Wassermann test, this affording an accurate and recent estimate of each man's condition and the effect of the treatment.

Records are kept in alphabetical order in a loose leaf folder so that the Wassermann reaction, the number of treatments, etc., for any given case can be ascertained at a glance.

The above chart shows in detail the results of treatment and the number of injections required.

One hundred and thirty-nine men in the present series received treatment here. The majority of the 27 receiving no treatment were transferred to some other institution, while a few had pulmonary tuberculosis and were therefore given no injections, previous experience having shown unfavorable results from treatment in such cases. As judged by the Wassermann reaction 107 (77.53 per cent.) have to date shown definite signs of improvement. The figures are specific, but at best they should only convey a general impression. Some of the cases which show improvement now may later become positive again, but on the other hand it is reasonable to assume that many of those which are listed as triple plus throughout will later develop negative reactions, as it may be noted that 13 of the latter have to date received only three or a less number of injections. A few remain "Wassermann fast" in spite of prolonged treatment, no adequate reasons have yet been put forward to explain these cases. In this connection it may be noted that the reliability of the Wassermann test as an indication of the patient's condition has been seriously questioned by some, it being claimed that certain cases though actually cured of their infection will still give a positive reaction. Another

point of interest to be noted is that 31 (22.30 per cent.) of those which showed improvement, first gave a negative reaction followed by a positive one again before a final negative, or at least a reduced Wassermann resulted.

During the administration of more than 768 arsphenamine injections, there were less than 20 untoward reactions. In these cases the patients almost immediately after the injection went into a more or less severe state of collapse or shock, with nausea and vomiting, weak, rapid and irregular pulse, and respiratory difficulty, with a temporary accompanying edema and cyanosis of the face and neck. The most severe case responded almost immediately to strychnin and was discharged from the hospital the next day. There have been four cases of jaundice following the giving of the drug, usually quite marked, but in three instances with no other symptoms beyond vague, slight gastrointestinal disturbances, duration from several weeks to a month or more. One case, however, after one injection developed a gradually increasing jaundice, and after an illness of five weeks died in coma. Autopsy showed marked degenerative changes in the liver.

As judged from the above series, the following conclusions may be made:

1. The Wassermann test should be made a routine procedure in all complete medical examinations.

2. A negative history and physical examination does not preclude the possibility of lues being present.

3. The treatment as outlined above is an effective and practically safe method of bringing about a negative Wassermann reaction.

4. Five or six injections, accompanied by mercury rubs extending over a period of from one to two years are usually sufficient to bring about the desired result.

5. A small percentage of cases show no improvement in spite of prolonged treatment.

ANTE AND POST-OPERATIVE TREATMENT

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The last five years has emphasized and disseminated, more than the previous twenty years, many features in surgical treatment which orthopaedic surgeons have been using for a long time. Preventive measures, ante-operative, and post-operative measures, are based on the functional outlook with definite relation to future function and efficiency. Previously there was a general tendency on the part of many surgeons to be so deeply interested in the pathological process and the technic of the surgical procedure to be used in its eradication, that the question of physiological disturbances of function was given little consideration. Without minimizing the value of a thorough knowledge of pathology, it has been very evident that things functional have received comparatively little attention.

The time is coming when all patients with more or less chronic conditions, will receive thorough consideration in respect to both functional and pathological conditions in the sense that active pro-

cedures aimed at correction of both conditions will be instituted. For instance, a woman with uterine prolapse will be examined anatomically for location of static faults, and physiologically for disturbances of organic balance. When this is done, there will be less operating for backaches and neuritic conditions before other obvious faults are corrected. It is a matter of common occurrence in orthopaedic practice to have patients referred, for leg and backache, give a history of one or more pelvic or abdominal operations having been done in an effort to relieve their symptoms, when they have never been stripped and examined to ascertain whether there were faults in their static alignment. Many of these patients give perfectly clear histories which evidence this static strain and the chain of neural changes which often accompany it.

The fact that actual organic disease exists, only emphasizes the fact that every added pound of energy which the patient possesses must be conserved to aid in overcoming it. Consequently, each system of activity in the body must have due consideration: circulatory, respiratory, eliminatory, mental and neural—especially sympathetic—endocrine, muscular, and bony. The last is not the least by any means.

The reason that so many chronic cases stay chronic is largely due to the fact that they are not completely gone over and all the points of nerve leakage ascertained. It is quite common to see patients who are struggling against some infectious or other pathological handicap, carrying a mechanical overload of twenty per cent. due to bad statics. This is frequently seen in bed patients as well as ambulatory cases. It is perfectly feasible not only to maintain proper bed postures, but to keep up muscle tone and nerve tone and aid physiological processes by properly applied physical and therapeutic measures.

I have maintained for years that the time would come when each hospital would have a gymnasium and physical therapy department for use in keeping up the efficiency of the hospital personnel, as well as for use as a definite part of the therapeutic equipment. This prophecy bids fair to be realized, for it is reasonable to suppose that the physio-therapeutic departments in military hospitals have come to stay, and already some have been established in civilian hospitals.

Immediate operations are necessary only in acute cases, and consequently there is usually ample time during which to establish a regime of physical supervision, by which I mean attention given to all physical needs, both for correction and prophylaxis. To illustrate: A middle-aged woman, mother of two children, presents herself for pain and neuritic symptoms in the upper back and shoulder regions. She has considerable disturbance at her menses, her back being worse at that time, and she had considerable low-back pain during her last pregnancy. Since nursing the last child, she has not regained weight nor strength, has occasional attacks of insomnia and suffers from indigestion and constipation.

Examination of pelvic viscera discovers a considerable degree of relaxation and prolapse with